



9-13 GRAPE STREET

SUSTAINABILITY STATEMENT

PROJECT MET

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EXECUTIVE SUMMARY

This report supports the application for works at 9-13 Grape Street which includes the erection of roof extension and change of use of existing building (sui generis) into residential (use class C3) on the upper floors (and part ground floor), Use Class B1 accommodation at basement level, and dual use accommodation at (either use class B1 or A1 retail) at ground floor and replacement of rooftop plant and associated works.

The refurbishment proposals ensure that current standards for space planning, acoustics and accessibility can be achieved or exceeded, which in turn will provide a building that will satisfy the needs of its future occupiers.

The objective is to deliver a building with a high sustainability performance taking account of the physical and technical constraints of the site. To do this a balance has been sought between the various environmental, social and economic issues prioritising those that provide the greatest potential for the building to limit its environmental impact.

A sustainability strategy has been developed by the project sustainability consultant for the proposed development in consultation with Project Met and the design team. The strategy has been informed by a preliminary BREEAM Domestic Refurbishment assessment for which a target rating of 'Excellent' is being sought for the residential element.

The following sustainability standards and targets have been identified for the proposed scheme in line with Camden's policy requirements:

❖ **Reduce CO₂ emissions over existing building performance:**

- Increased levels of insulation and air tightness to provide good thermal performance over existing building;
- Energy efficient lighting throughout and whole-house ventilation with heat recovery to each residential unit;
- Low carbon heating provided by air to water heat pumps.

❖ **Target domestic water use rate of between 107 and 117 litres/person/day:**

- Water efficient sanitaryware;
- Water efficient white goods;
- No external water use.

❖ **No net gain in peak runoff from that of the existing development**

❖ **Responsible use of materials:**

- Reuse of building structure;
- New materials to have low environmental impact, as rated by the Green Guide;
- Responsibly sourced materials, including timber.

❖ **Responsible construction practices:**

- Exemplary performance under Considerate Constructors Scheme;
- Best practice site waste and environmental management plans.

❖ **Design for resilience to future climate impacts**

- Measures to reduce overheating risk and water consumption.

1 APPROACH TO SUSTAINABILITY

1.1 DEVELOPMENT DESCRIPTION

The applicant is seeking consent for the proposed works at 9-13 Grape Street which includes the erection of roof extension and change of use of existing building (sui generis) into residential (use class C3) on the upper floors (and part ground floor), Use Class B1 accommodation at basement level, and dual use accommodation at (either use class B1 or A1 retail) at ground floor and replacement of rooftop plant and associated works.

The refurbishment proposals ensure that current standards for space planning, acoustics and accessibility can be achieved or exceeded, which in turn will provide a building that will satisfy the needs of its future occupiers.

1.2 9-13 GRAPE STREET SUSTAINABILITY STRATEGY

The sustainability strategy for the Development has been prepared by the project sustainability consultant in consultation with Project Met and the design team. To deliver a good sustainability performance within the constraints of the development a balance has been sought between the various environmental, social and economic issues. This means prioritising those issues that provide the greatest potential for the development to limit its environmental and social impact at a local and national scale, without compromising the viability of the scheme.

The strategy has been informed by a preliminary environmental assessment for the residential element which has been carried out by a licensed assessor for the Development under the BREEAM Domestic Refurbishment 2012 scheme.

1.2.1 SUSTAINABILITY DRIVERS

The Camden Planning Guidance Section 3 (CPG 3) sets out the expectations of the Council with regards to development proposals and their sustainability performance. Taking account of the technical and physical constraints imposed by the existing building and its location, the scheme proposals are unable to implement all the sustainability measures set out in CPG 3. However, based on appropriateness and viability the following sustainability standards and targets are proposed for the Development:

Topic	CPG 3 Section	Comments
Energy	2 - 6	<p>The Development is targeting a post-refurbishment EPC rating of C.</p> <p>Full details of the energy strategy, developed in line with the energy hierarchy, are provided in the Energy Statement which accompanies this application.</p> <p>A summary is provided in Section 4 of this document.</p>
Water efficiency	7	<p>The Development is targeting a maximum internal water use rate of between 107 and 117 litres/person/day.</p> <p>Details are provided in Section 5 of this document.</p>
Sustainable use of materials	8	<p>The Development intends to reuse the existing structure in its entirety. New materials will achieve the highest possible ratings under the Green Guide.</p> <p>Details are provided in Section 6 of this document.</p>

Sustainability assessment tools	9	The development is targeting a BREEAM Domestic Refurbishment rating of Excellent. Details are provided in Section 3 of this document.
Brown roofs, green roofs and living walls	10	A steeply pitched roof is proposed to provide additional residential accommodation with a small flat roof area set aside for essential building services plant. There is no further available roof space therefore green/brown roofs would not be a viable for this scheme. Similarly, there are no viable options for installing a living wall.
Flooding	11	The Environment Agency Flood Map indicates the Development is in an area of low flood risk from fluvial flooding The development will achieve no net gain in peak rate runoff from that of the existing development. Due to the provision of residential accommodation at basement level, there is no space provision for attenuation tanks or other measures to reduce the rate of surface water runoff.
Adapting to climate change	12	The Development has been designed as far as practicable for resilience to future climate impacts, in particular overheating risk. Details are provided in Section 9 of this document.
Biodiversity	13	Due to existing site constraints, there will be no outdoor space and subsequently no opportunities for promoting local biodiversity
Local food growing	14	Due to existing site constraints, there will be no outdoor space and subsequently no opportunities for growing food.

1.2.2 SUSTAINABILITY STATEMENT

This document sets out the design proposals adopted by the applicant in order to deliver a high sustainability performance appropriate to this type of development, and to demonstrate compliance with national and local planning policy requirements (see Section 2). In particular, it addresses the sustainability topics set out in Camden Planning Guidance 3 as well as other topics appropriate to this project.

2 POLICY CONTEXT

2.1 OVERVIEW

The national and local planning policy requirements relating to sustainable development have been reviewed in order to establish the relevant standards and targets, which in turn have guided the development of the sustainability strategy. The key planning drivers and ‘triggers’ that have informed the sustainability design proposals put forward by this sustainability statement are set out in this chapter.

2.2 NATIONAL POLICY - THE NATIONAL PLANNING POLICY FRAMEWORK

The National Planning Policy Framework (NPPF) replaced the suite of Planning Policy Statements and Guidance in 2012. The NPPF identifies three dimensions to sustainable development - economic, social and environmental – which should be applied jointly and simultaneously:

Economic role – contributing to building a strong, responsive and competitive economy by identifying and coordinating development requirements;

Social role – supporting strong, vibrant and healthy communities by creating a high quality built environment, with accessible local services that reflect the community’s needs and support its health, social and cultural well-being;

Environmental role – contributing to protecting and enhancing our natural, built and historic environment. This includes helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change.

The NPPF promotes the pursuit of sustainable development by seeking positive improvements to the built and natural environment, and to people’s quality of life. This will include:

- Improving the conditions in which people live, work, travel and take leisure;
- Widening the choice of high quality homes;
- Net gains for biodiversity.

2.3 LOCAL POLICY – CAMDEN COUNCIL

Camden’s Local Development Framework (LDF), which replaced the Unitary Development Plan in November 2010, is a collection of planning documents that (in conjunction with national planning policy and the Mayor’s London Plan) sets out the Council’s strategy for managing growth and development in the borough.

The Core Strategy sets out the key elements of Camden’s vision for the borough and is a central part of the LDF. The Development Policies set out detailed planning criteria that the Council use to determine applications for planning permission in the borough.

The over-arching policies relating to sustainable development are summarised below:

❖ **Core Strategy Policy CS13 - Tackling climate change through promoting higher environmental standards**

Reducing the effects of and adapting to climate change

The Council will require all development to take measures to minimise the effects of, and adapt to, climate change and encourage all development to meet the highest feasible environmental standards that are financially viable during construction and occupation by:

- a) ensuring patterns of land use that minimise the need to travel by car and help support local energy networks;

- b) promoting the efficient use of land and buildings;
- c) minimising carbon emissions from the redevelopment, construction and occupation of buildings by implementing, in order, all of the elements of the following energy hierarchy:
 - 1. ensuring developments use less energy,
 - 2. making use of energy from efficient sources, such as the King's Cross, Gower Street, Bloomsbury and proposed Euston Road decentralised energy networks;
 - 3. generating renewable energy on-site; and
- d) ensuring buildings and spaces are designed to cope with, and minimise the effects of, climate change.

❖ Development Plan Policy DP22 – Promoting sustainable design and construction

The Council will require development to incorporate sustainable design and construction measures. Schemes must:

- a) demonstrate how sustainable development principles have been incorporated into the design and proposed implementation; and
- b) incorporate green or brown roofs and green walls wherever suitable.

The Council will promote and measure sustainable design and construction by:

- c) expecting new build housing to meet Code for Sustainable Homes Level 3 by 2010 and Code Level 4 by 2013 and encouraging Code Level 6 (zero carbon) by 2016.;
- d) expecting developments (except new build) of 500 sq m of residential floorspace or above or 5 or more dwellings to achieve “very good” in EcoHomes assessments prior to 2013 and encouraging “excellent” from 2013;
- e) expecting non-domestic developments of 500sqm of floorspace or above to achieve “very good” in BREEAM assessments and “Excellent” from 2016 and encouraging zero carbon from 2019.

The Council will require development to be resilient to climate change by ensuring schemes include appropriate climate change adaptation measures, such as:

- f) summer shading and planting;
- g) limiting run-off;
- h) reducing water consumption;
- i) reducing air pollution; and
- j) not locating vulnerable uses in basements in flood-prone areas.

❖ Development Plan Policy DP23 – Water

The Council will require developments to reduce their water consumption, the pressure on the combined sewer network and the risk of flooding by:

- a) incorporating water efficient features and equipment and capturing, retaining and re-using surface water and grey water on-site;
- b) limiting the amount and rate of run-off and waste water entering the combined storm water and sewer network through the methods outlined in part a) and other sustainable urban drainage methods to reduce the risk of flooding;
- c) reducing the pressure placed on the combined storm water and sewer network from foul water and surface water run-off and ensuring developments in the areas identified by the North London Strategic

Flood Risk Assessment and shown on Map 2 as being at risk of surface water flooding are designed to cope with the potential flooding;

- d) ensuring that developments are assessed for upstream and downstream groundwater flood risks in areas where historic underground streams are known to have been present; and
- e) encouraging the provision of attractive and efficient water features.

❖ Camden Planning Guidance 3 - Sustainability

This guidance provides information on ways to achieve carbon reductions and more sustainable developments. It also highlights the Council's requirements and guidelines which support the relevant Local Development Framework (LDF) policies set out above.

This Sustainability Statement has been prepared in alignment with the Guidance Section 3 to demonstrate compliance with Camden's aspiration for low carbon and sustainable refurbishments.

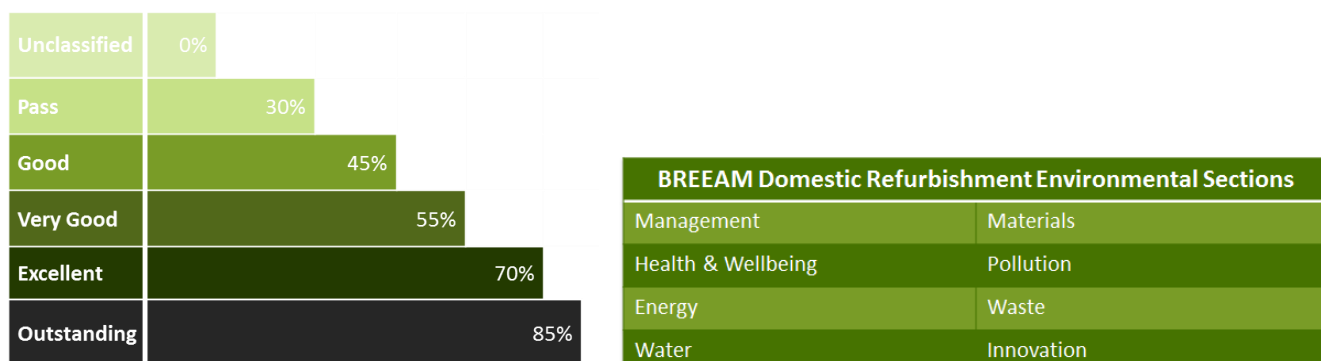
3 SUSTAINABILITY ASSESSMENT

3.1 BREEAM DOMESTIC REFURBISHMENT 2012

BREEAM Domestic Refurbishment (BDR) was published in 2012 and supersedes 'Ecohomes' as the assessment method for dwellings developed as part of a building refurbishment. This includes change of use and conversion projects. Where a building is extended to provide new residential accommodation, those new dwellings can also be assessed under BREEAM Domestic Refurbishment.

BDR seeks to minimise the adverse effects of refurbishment on the environment at global and local scales, whilst promoting healthy indoor conditions for the occupants. The environmental implications of a new building are assessed at the design stage and compared with good practice by independent assessors. An overall rating of the building's performance is given using the terms Pass, Good, Very Good, Excellent or Outstanding. This is determined from the total number of BREEAM credit criteria met and their respective environmental weighting. The total of all these scores is the overall rating, which is awarded according to the scale below.

BDR addresses a range of sustainability issues under seven key categories, plus 'Innovation' credits for where exemplary performance has been achieved.



In line with policy requirements, the Development is targeting an 'Excellent' rating.

A preliminary assessment has been carried out by a licensed BREEAM Assessor and Accredited Professional (AP) informed through consultation with the project team. This has ensured the appropriateness and achievability of the credits targeted in order to attain the desired rating without impacting upon the viability of the scheme.

The anticipated target score for the Development is 75.73% equating to BREEAM 'Excellent' rating. A summary of the credits targeted is provided in Figure 1 on the following page. The full pre-assessment report is provided as a separate attachment.

It is important to note that at this stage the pre-assessment is not fixed and some credits may be replaced by others whilst the detailed design progresses. However, the overall target of an Excellent rating will be maintained.

9 - 13 Grape Street

BREEAM DOMESTIC REFURBISHMENT PRELIMINARY ASSESSMENT SUMMARY

MANAGEMENT		Credits Available	Targeted Credits
12.00%			Baseline
Man 01	Home Users Guide	3	3
Man 02	Responsible Construction Practices	2	2
Man 03	Construction Site Impacts	1	1
Man 04	Security	2	2
Man 05	Protection & Enhancement of Eco Features	1	1
Man 06	Project Management	2	2
Section Credit Total		11	11
Section Weighted Total		12.00%	12.00%
HEALTH & WELLBEING		Credits Available	Targeted Credits
15.00%			Baseline
Hea 01	Daylighting	2	0
Hea 02	Sound Insulation	4	3
Hea 03	Volatile Organic Compounds	1	1
Hea 04	Inclusive Design	2	2
Hea 05	Ventilation	2	2
Hea 06	Safety	1	1
Section Credit Total		12	9
Section Weighted Total		17.00%	12.75%
ENERGY		Credits Available	Targeted Credits
43.00%			Baseline
Ene 01	Improvement in Energy Efficiency Rating	6	3
Ene 02	EER Post Refurbishment	4	3.5
Ene 03	Primary Energy Demand	7	7
Ene 04	Renewable Technologies	2	1
Ene 05	Energy Labelled White Goods	2	2
Ene 06	Drying Space	1	0
Ene 07	Lighting	2	1
Ene 08	Display Energy Devices	2	2
Ene 09	Cycle Storage	2	1
Ene 10	Home Office	1	0
Section Credit Total		29	20.5
Section Weighted Total		43.00%	30.40%
WATER		Credits Available	Targeted Credits
11.00%			Baseline
Wat 01	Internal Water Use	3	2
Wat 02	External Water Use	1	1
Wat 03	Water Meter	1	0
Section Credit Total		5	3
Section Weighted Total		11.00%	6.60%

Continued on the next page

MATERIALS		Credits Available	Targeted Credits
8.00%			Baseline
Mat 01	Environmental Impact of Materials	25	20
Mat 02	Responsible Sourcing of Materials	12	6
Mat 03	Insulation	8	4
Section Credit Total		45	30
Section Weighted Total		8.00%	5.33%
WASTE		Credits Available	Targeted Credits
3.00%			Baseline
Wst 01	Household Waste	2	1
Wst 02	Refurbishment Site Waste Management	3	3
Section Credit Total		5	4
Section Weighted Total		3.00%	2.40%
POLLUTION		Credits Available	Targeted Credits
6.00%			Baseline
Pol 01	NOx Emissions	3	0
Pol 02	Surface Water Runoff	3	1
Pol 03	Flooding	2	2
Section Credit Total		8	3
Section Weighted Total		6.00%	2.25%
INNOVATION		Credits Available	Targeted Credits
10.00%			Baseline
Man 02	Responsible Construction Practices	2	1
Man 05	Protection & Enhancement of Eco Features	1	0
Man 06	Project Management	2	1
Hea 04	Inclusive Design	1	1
Ene 01	EER Post Refurbishment	2	0
Ene 08	Display Energy Devices	1	1
Wat 01	Internal Water Use	1	0
Was 02	Refurbishment Site Waste Management	1	0
Pol02	Surface Water Run-off	1	0
Section Credit Total		Up to 10	4
Section Weighted Total		10.00%	4.00%
TOTAL SCORE			75.73%
BREEAM DOMESTIC REFURBISHMENT RATING			Excellent

Figure 1 - Summary of Anticipated Performance under BREEAM Domestic Refurbishment 2012

4 ENERGY & CO₂

Camden Key Messages

All developments are to be designed to reduce carbon dioxide emissions.

Energy strategies are to be designed following steps set out by the energy hierarchy.

There are a variety of renewable energy technologies that can be installed to supplement a development's energy needs.

Developments are to target a 20% reduction in carbon dioxide emissions from on-site renewable energy technologies.

The proposed energy strategy has been developed to maximise cost-effective opportunities for reducing the Development's energy demand and CO₂ emissions by adopting the principles of The London Plan's Energy Hierarchy: "be lean; be clean; be green".

The overall aim is to reduce the energy demand of the building as far as practicable through passive and active efficiency measures. Once this is achieved, on-site energy generation is explored to further reduce the development's CO₂ emissions, where viable.

Figure 2 below shows the regulated CO₂ emission reduction achieved by the whole development at each stage of the energy hierarchy.

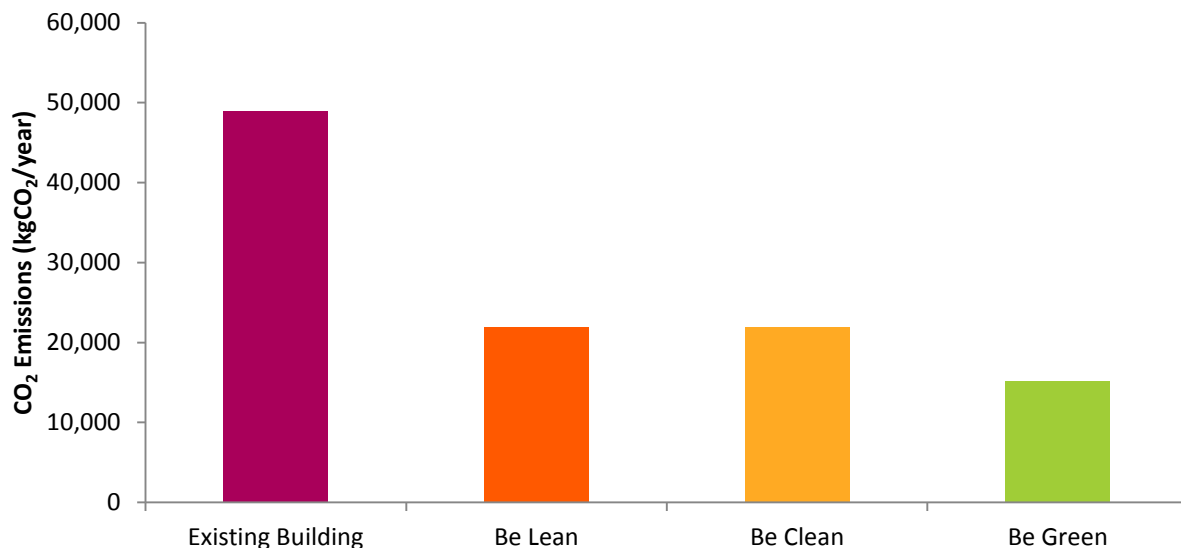


Figure 2 –CO₂ emissions reductions through application of the energy hierarchy

Due to a number of physical and technical constraints many renewable energy technologies have been discounted for the Development. However, as the graph above demonstrates a significant reduction in CO₂ has been achieved through energy efficiency measures alone.

In summary, the following refurbishment measures are proposed to deliver an energy efficient residential building.

PROPOSED DESIGN MEASURES – PASSIVE

Building fabric performance	<p>The thermal performance of the existing building envelope will be improved through the installation of insulation with a target of achieving current new build standards where viable.</p> <p>Windows will be replaced with high specification glazing to achieve a performance that exceeds minimum standards of Part L 2013.</p>
Ventilation	<p>A secure means of natural purge ventilation will be provided through openable windows from the first floor upwards.</p> <p>The primary source of year-round ventilation to the residential units is through individual whole house mechanical ventilation units specified with heat recovery (MVHR).</p>
Low energy lighting and controls	<p>Low energy lighting will be specified throughout the building, including communal areas. This will help to reduce related energy use as far as practicable. Good control is key to further minimising lighting energy consumption and will be provided as standard.</p>
Air to water source heat pumps	<p>Following an analysis of various heating options, air to water source heat pumps have been selected as the most efficient and low carbon means of providing heating to the building. Details of this analysis are provided in the accompanying energy statement.</p>

A full energy statement setting out the proposals for reducing CO₂ emissions has been prepared and accompanies this planning application. Please refer to this document for detailed information and calculations.

Note: The calculations and analysis carried out as part of the energy assessment are based on the original drawings prior to amendments following consultation with the council and may not fully reflect the latest layouts. The energy assessment is being reviewed and updated to incorporate Part L 2013 requirements and amendments to the proposal. The amended energy statement will be resubmitted to the Council.

5 WATER MANAGEMENT

5.1 WATER CONSERVATION

Camden Key Messages

All developments are to be water efficient.

As responsible designers and developers the project team is seeking to achieve a reduction in water use for the building over standard performance. The water efficiency target will be informed by the BREEAM Domestic Refurbishment criteria for an Excellent rating, which sets a mandatory requirement for each dwelling to achieve a water use rate of between 107 and 117 litres/person/day.

To meet this target and to minimise the need for further water infrastructure to serve the building water efficient bathroom fittings (and appliances where applicable) will be installed as standard. Since there will be no outdoor space provision, consideration for external water use is not required.

PROPOSED DESIGN MEASURES

Water efficient sanitaryware	This includes low, dual flush WCs, wash hand basin and kitchen taps with restricted flow rates, reduced flow showers and avoidance of over-sized baths. Typically a detailed design issue, however understanding the performance requirements of bathroom fittings at this stage will help to determine the likely achievable water savings.
Water efficient white goods	Again, typically a detailed design issue, however consideration for appliances with a high level of water efficiency is being made by Project Met.

5.2 MANAGING WATER USE

To ensure ongoing sustainability performance during occupation, water use must be appropriately and effectively monitored. This will ensure that the residential units maintain a high level of resource efficiency and continue to minimise their environmental impact.

The use of individual water meters that record and display both current and historical data will be investigated for suitability for installation to all residential units. If appropriate devices are obtained these will allow occupants to monitor and compare their water consumption and costs over time.

5.3 FLOOD RISK AND SUSTAINABLE DRAINAGE

Camden Key Messages

All developments are required to prevent or mitigate against flooding.

All developments are expected to manage drainage and surface water.

The application is for the refurbishment of an existing building. No increase to the building footprint is proposed and consequently there will be no increase to current runoff levels. The viability of achieving a reduction in runoff rates is limited due to insufficient space to accommodate attenuation measures, such as attenuation tanks. These would typically be stored within the basement; however the proposals intend to make efficient use of this space for residential accommodation, bin and bicycle stores and the building's plant room and central riser.

6 MATERIALS & CONSTRUCTION

6.1 REDUCING ENVIRONMENTAL IMPACT OF MATERIALS

Camden Key Messages

Reduce waste by firstly re-using your building, where this is not possible you should implement the waste hierarchy

The waste hierarchy prioritises the reduction, re-use and recycling of materials

Source your materials responsibly and ensure they are safe to health.

In line with step one of the waste hierarchy, shown in figure 3 below, the applicant intends to retain the current building structure, with only minor repairs to the façade envisaged.

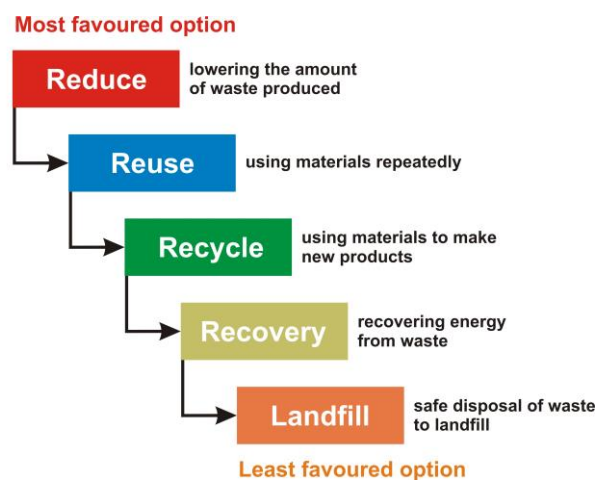


Figure 3 - The Waste Hierarchy

The use of new materials will be necessary to convert the building for residential use and to bring it up to current standards, particularly in terms of energy efficiency. The existing windows will be replaced with those with a high thermal performance to support the project's strategy for a low carbon refurbishment. A new, pitched roof extension is also proposed, as is fabric insulation to bring the building up to current regulations as far as practicable.

The specification of the new building elements will be important in terms of balancing the requirements of the design brief with the requirements for a building with low environmental impact.

The new elements and the materials specification will be assessed against The Green Guide to Specification. The Green Guide is a reference website and electronic tool providing guidance for designers and their clients on the relative environmental impacts for a range of different building elemental specifications. The ratings within the Guide are based on Life Cycle Assessment, using the BRE's Environmental Profile Methodology.

PROPOSED DESIGN MEASURES

Reuse of structure	Reuse of the building structure will ensure the amount of virgin materials used as part of the refurbishment is kept to a minimum.
Low environmental impact	New materials and material components with lowest environmental impact, as rated by the Green Guide to Specification, will be selected where practical. This will apply to insulation materials also.
Volatile Organic Compounds (VOCs)	The proposals include the use of materials which contain no harmful substances and preservatives with minimum toxicity. Where practical this will include flooring and floor finishes, wall coverings, suspended ceiling tiles and paints & varnishes.
Thermal performance	Thermal insulation products will be specified to upgrade the efficiency of the envelope and to super-insulate the new mechanical services pipework.

6.2 RESPONSIBLE SOURCING

This issue will mainly be managed by the Contractor as part of their procurement strategy. However, in order to demonstrate the applicant's commitment to responsible sourcing of materials, requirements relating to this issue will be defined early in the tender stage and will be set out clearly in tender documentation.

PROPOSED DESIGN MEASURES

Responsibly sourced timber	There will be a requirement to source timber in accordance with the UK Government's Timber Procurement Policy. Additionally, if appropriate local supplies are available, the development will aspire to use timber which is reclaimed, including during construction. Both measures will ensure the sustainable use of wood within the development.
Supplier EMS	Where possible, the Contractor will be required to prioritise the use of suppliers with a current accredited environmental management system (EMS) in place over those suppliers that don't.
Chain of custody	Contractors will be encouraged to source materials from suppliers with a proven chain of custody for sustainably and responsibly sourced products.

6.3 MANAGING CONSTRUCTION

The applicant is committed to ensuring that the Development exceeds minimum legislative and regulative requirements relating to construction practices. The Contractor, once appointed, will be required to adopt the following better practice procedures to ensure sustainable and responsible construction.

PROPOSED CONSTRUCTION PRACTICES

Site waste management plan

In line with the waste hierarchy the Contractor will set challenging resource efficiency and waste reduction targets, to be included as part of a best practice Site Waste Management Plan. The targets will relate to minimising waste generation (excluding hazardous waste) and to diverting waste from landfill through reuse and recycling. It will be the responsibility of the Contractor to put in place procedures to sort and reuse/recycle construction waste in order to seek achievement of these targets wherever possible.

Contractors will also be encouraged to follow guidance from DEFRA, BRE and/or WRAP (Waste & Resources Action Programme).

Construction environmental management plan

It is essential to the applicant that the environmental impacts of the construction works are mitigated as far as practicable. The project team will work with the contractor to assist development and implementation of measures to support this commitment. This will include a requirement for the contractor to have an accredited environmental management system (EMS) in operation, and to develop a construction environmental management plan (CEMP) that exceeds standard practice to include procedures for monitoring and recording resource use.

The CEMP will be developed in full once a contractor has been appointed.

Considerate Constructors Scheme

The Considerate Constructors Scheme (CCS) is a UK certification scheme that encourages the considerate management of construction sites. The applicant has committed to requiring the Contractor, once appointed, to sign up to the CCS and will encourage an exemplary performance under the criteria of the scheme with a target of 40 or more points out of the 50 available.

7 POLLUTION AND LOCAL IMPACTS

It is the intention of the refurbishment proposals to minimise their impact on the local environment. This will be achieved through the implementation of measures to control pollution and to avoid a negative impact on local environmental indicators, as far as practicable.

7.1 AIR POLLUTION

Building CO₂ emissions will be minimised through a low carbon approach to fabric insulation, heating, ventilation and lighting. At present, there is evidence of gas boilers at the existing property which emit NO_x emissions thereby impacting on local air quality. The proposed use of air source heat pumps in place of boilers to supply heat to each apartment will result in zero NO_x emissions at a local level.

The Development has a zero car policy with no provision for car parking. Instead, secure and accessible cycle parking has been provided for use by the building residents.

Measures for minimising air pollution, including dust control, during construction will be implemented through the Construction Environmental Management Plan, to be developed by the appointed Contractor.

7.2 NOISE POLLUTION

An acoustic specialist has been commissioned to carry out a noise assessment of the site and to advise on the recommended minimum sound insulation performance of the facades. This will include all framing and openable elements, such as doors, windows and vents.

Advice will also be provided on the maximum noise emission limits of the external plant.

All roof-based plant will be located to the rear of the property and out of sight lines from the pavement and adjacent properties. The plant will be screened by the surrounding pitched roof. However, if additional attenuation is required, this could be provided by an acoustically-treated plant enclosure specified in accordance with the recommendations of the acoustic report.

Party wall sound insulation will be provided between dwellings and adjacent buildings to target a 3dB improvement over Building Regulations Part E, where viable.

Measures for minimising noise and vibration impact during construction will be implemented by the appointed Contractor in line with the Code of Considerate Practice (developed by the Considerate Construction Scheme).

7.3 WATER POLLUTION

No contamination from surface water runoff is expected since external car parking areas are not provided. Negligible contamination is anticipated from roof runoff which will be routed directly to the local sewerage infrastructure.

Measures for minimising water use and pollution during construction will be implemented through the Construction Environmental Management Plan, to be developed by the appointed Contractor.

7.4 DAYLIGHT, SUNLIGHT AND OVERSHADOWING

A daylight, sunlight and overshadowing report has been prepared by GIA which considers the relevant residential surrounding properties and technical assessments which were undertaken for all the relevant habitable rooms.

In summary the report concludes that all the properties surrounding the Development Site will retain sunlight levels that comply with the BRE guidelines.

It is the opinion of GIA that given the above and noting that Grape Street is within an urban location, the proposed development will have no material impact to the daylight and sunlight levels to the surrounding residential accommodation.

In relation to the overshadowing assessment, GIA do not expect the Development to cause any noticeable additional overshadowing to the surrounding area. GIA consider that instead there could be a benefit from the Development through more sun being reflected off the new roof where at present it is lost over the top of the existing roof.

8 SUSTAINABLE LAND USE

Ideally, a sustainable development utilises land that has been previously developed, thereby ensuring that 'green' space or areas of open public space are retained wherever possible. This is particularly important in urban centres, like London.

The Development site currently comprises a building used for commercial purposes. The intention is to convert the building and upgrade to provide new, high quality and sustainable commercial and residential accommodation without the need for developing new land.



As a refurbishment of an existing building in a dense, urban location there is limited provision for outdoor space or green infrastructure such as living walls and green roofs. The front façade (west elevation) does not allow for balconies whilst the rear façade (east elevation) is a party wall which is outside of the application boundary. At roof level, the design proposals include a new roof extension which will provide additional residential units. A small area at roof level has been allocated for building services plant which is essential to the building's operation.

For these reasons it has not been possible to propose measures to promote local biodiversity or local food growing.

9 ADAPTING TO CLIMATE CHANGE




9.1 CLIMATE IMPACTS AND RISKS

Camden Key Messages

All development should consider how it can be occupied in the future when the weather will be different. The early design stage is the most effective time to incorporate relevant design and technological measures.

Our climate is changing and this will have notable environmental, social and economic implications. In response, the built environment needs to be able to adapt to the impacts of climate change to minimise the associated risks.

Using climate projections from the UK Climate Impacts Programme (UKCP09) the impacts and associated risks from a changing climate in Central London mainly relate to rising temperatures and changing rainfall patterns, which are exacerbated by extreme weather events that are hard to predict. A basic assessment of the key impacts and associated risks are summarised below:

Climate impact			Climate risk
Rising temperatures and hot weather events	Overheating - internal and external (i.e. urban heat island)		Health implications for people Operational and cost issues for building managers/occupiers Increased CO ₂ from increased cooling demand (known as 'maladaptation')
Hot weather events and prolonged or intense periods of precipitation	Structural stability		Subsidence or heave ('shrink-swell') Cracking of building fabric Safety implications for people Operational and cost issues for building managers/occupiers
Increased winter rainfall and prolonged or intense periods of precipitation	Water resource and flooding		Water shortages Localised flooding Operational and cost issues for building managers/occupiers

The applicant and the project design team consider it a duty of care to ensure as far as possible the refurbishment proposals for 9-13 Grape Street help support the building in remaining safe and operational throughout its lifespan, regardless of the climate.

9.2 MANAGING OVERHEATING

The use of active cooling in buildings in Central London is expected to increase due to rising temperatures, made worse by the Urban Heat Island (UHI) effect. The use of air conditioning can obviously offset internal overheating risk; however increased use of these systems will increase the amount of energy consumed and consequently CO₂ emissions. This will further contribute to climate change. Measures that cause this effect are often referred to as 'maladaptation'; a short term solution, which in reality exacerbates the issue.

Adopting passive and low carbon cooling measures where possible within the Development will help to limit the risk of overheating (as indicated by the modelling carried out by Scotch Partners) and provides dual benefits in terms of both climate change mitigation and adaptation.

PROPOSED DESIGN MEASURES

Solar control	Apartments will be largely shaded against summer solar gain by the buildings opposite. Based on occupants being able to use using blinds to control the level of light entering the property it is anticipated that no further solar control will be required.
Natural ventilation	A secure means of natural ventilation will be provided to 1 st floor level apartments and above through openable windows, supplemented by a mechanical ventilation system with heat recovery (MVHR). This will be particularly important at night when the occupant may wish to keep the windows closed due to external noise. These measures are deemed sufficient to maintain a comfortable level of coolth to the apartments at 1 st to 3 rd floor levels. At 4 th floor level low carbon background cooling may need to be considered to mitigate overheating risk; however, it is anticipated that this will only be required during extreme hot weather events.
Low energy lighting	Low energy lighting will be provided throughout the building, including communal areas. This will reduce internal heat gains associated with standard performance luminaires.

9.3 MANAGING STRUCTURAL STABILITY

The building is deemed to be structurally stable, particularly given its mid-terrace position. Minor repairs to the existing façade are anticipated as part of the refurbishment which will help to protect against future weathering. However, the close proximity of surrounding buildings is likely to provide a good level of protection to the façade against adverse weather conditions.

9.4 MANAGING WATER RESOURCE AND FLOODING

Drier summers and periods of prolonged drought will put pressure on the availability of mains water in Central London. This will be experienced by both domestic and commercial users as the demand for more water for irrigation increases, whilst simultaneously being subjected to increased demand to supply new development.

Conversely, increases in winter precipitation and the frequency of unpredictable, intense rainfall events will lead to a greater risk of flash flooding from surface water run-off, exacerbated by increased urbanisation. Surface water flooding is already a significant source of flood risk for Central London, more so than river flooding due to the defences provided by the Thames Barrier.

The Development will achieve a reduced mains water demand over standard performance through efficient fittings and appliances. Devices to enable occupants to monitor their water consumption are also proposed, if available. These measures will ensure no additional burden is placed on the local utility network and will help the building and its users to be more resilient to the climate risks associated with water shortages.

In regards to surface water runoff, the refurbishment is not envisaged to increase the rate of peak runoff from that of the existing site, but has very limited scope to reduce the current rates

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